Powerduction 110L

User manual

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WARRANTY

Upon delivery, the buyer will have to make sure that the machine is complete of all parties. Deficiencies and anomalies must be reported within the terms of the law. Any attempt to tamper with any part of the machine and / or any plaque on the machine itself, invalidate the warranty, CE marking (if affixed by the manufacturer), the declaration of conformity and / or the manufacturer's declaration.
The manufacturer is also considered exempt from liability arising from the following cases:

- Incorrect installation;
- Improper use of the machine by personnel not adequately trained;
- Improper use of the relevant safety regulations;
- Lack of maintenance;
- Modification of the machine or use of non-original parts for the repair.

IDENTIFICATION OF THE MACHINE

On the back of the machine appears an identification plate, on which in addition to CE marking is reported :

- Name and address of the manufacturer
- Year of manufacture
- Model
- Type of machine
- Weight
- Voltage

These data must be mentioned whenever it requires the intervention of technicians or for the request of spare parts.

PRODUCT SPECIFICATIONS

Induction heater.
Power: 11.0 kW
Voltage: 400 V
Mains frequency : 50 Hz
Heater frequency : 15-40 kHz, controlled by microprocessor.
Insulation Class : F, No. of poles : 3 + T.
Cooling liquid : provided. Standard automotive cooling liquid (water + 30% max. glycol).
Mains cable : 8 m.
Inductor cable : 3 m.

DIMENSIONS AND WEIGHT

Weight 110 kg, height 760 mm + 96 mm wheels
Width 500 mm
Depth 600 mm

NORMATIVE REFERENCES

Directive CE2004/40 / Exposure to electromagnetic fields
The Low Voltage Directive CE 2006/95
Machinery Directive 2006/42/EC
EMC Directive 2004/108/EC
Directive 2002/95/EC
EC Directive 2002/96

USING THIS MANUAL

It is very important that this manual, designed to provide the user with a general knowledge of the machine, as well as instructions for use and maintenance deemed necessary for the proper operation, be kept with the machine for future reference.

The user manual, as mentioned by the law, is an integral part of the machine and must accompany it until its destruction.

The warnings given must be read carefully, for safety reasons, before installation and use. It is prohibited for any reason to modify this manual without the written permission of the manufacturer or dealer.

GENERAL NOTES ON SAFETY

The machine is constructed in a workmanlike manner. Its durability and reliability will be much more effective if it is correctly used and regular maintenance is done.

Always read the instructions contained in this manual, they provide important information for safety.

RECOMMENDATIONS OF USE

This machine should be used only for the purpose for which it has been designed, namely: generate heat within ferrous materials. Any other use not expressly provided in this manual is strictly forbidden, as improper and therefore dangerous. The machine is semi-automatic and requires the presence of the operator.

WARNINGS :

The following recommendations should be strictly followed by users, in order to prevent risks of material damage, or people injuries.

The operator has the personal responsibility to respect, not only for himself, but also those who may be exposed to the risks of the machine, all the rules that relate to security. Before performing any operation with the machine, therefore, carefully read this manual, as it gives guidelines and procedures to operate the product correctly and safety.

- The use of the machine must be carried out only by trained adult personnel and in full compliance with local regulations and the instructions contained in the manual.
- Strictly follow the signs and mandatory signs and hazard on the machine.
- Before any maintenance electrically isolate the machine to prevent accidental starting.
- In the event of injury or breakage of connecting pipes or electrical cables, act promptly to replace them.
- In case of leakage of cooling liquid, the floor must be cleaned to avoid risks of people falling.
- Do not leave the equipment exposed to the weather (rain, wind, etc…).
- Do not leave the equipment unattended in the hands of children.
- Should you decide not to use the equipment, you will make it inoperative fulfilling to all practices relating to disposal in accordance with law.

CONSTRUCTIONS FEATURES

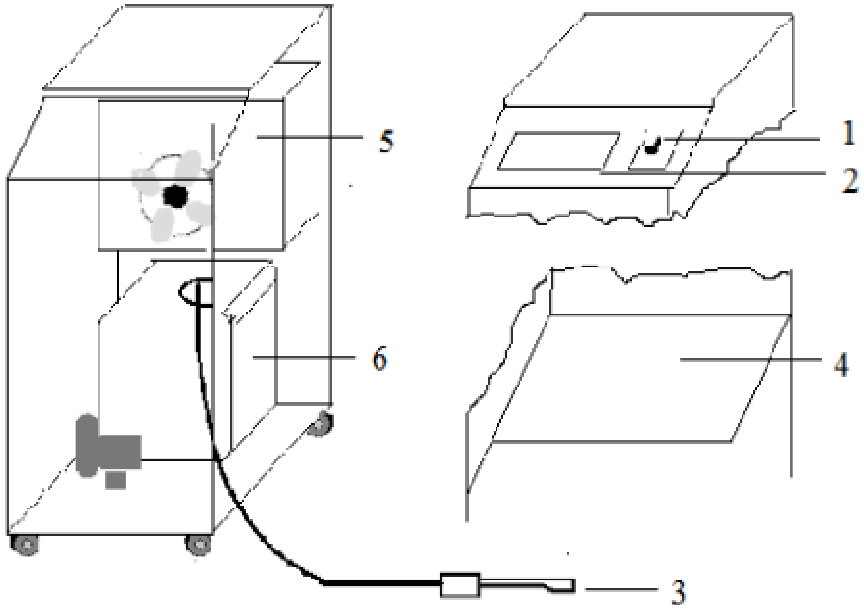
The machine was designed and built in compliance with the essential health and safety requirements laid down by the Machinery Directive 89/392 EEC and subsequent amendments.
In particular, given that the operator is in direct contact with the machine :

- Eliminate sharp edges and sharp angles;
- Avoid unstable conditions that can result in a risk of overturning, falling or inappropriate movements;
- Ensure that the operator cannot come into direct contact with live parts during machining which may cause electric shock or injury.

And everything else needed to secure its use.

The main parts of the POWERDUCTION can be summarized as follows:

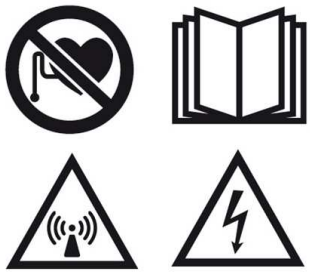
1) ON/FF switch
2) Control panel
3) Inductor
4) PCB
5) Fan
6) Cooling unit



Signs and warning signs

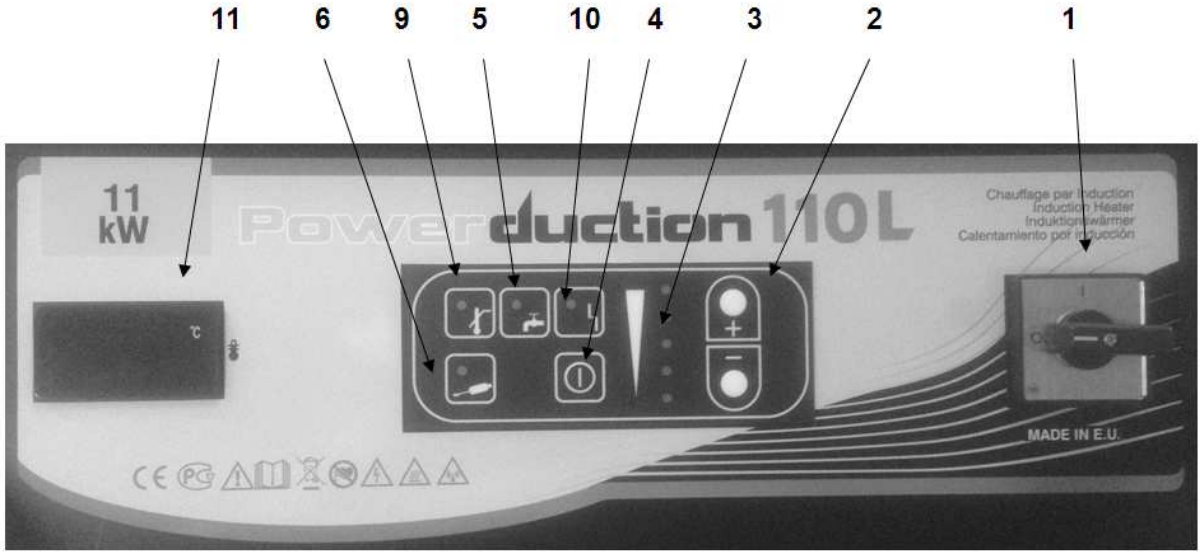
On the machine are placed signal warnings and mandatory signs that the operator must follow for his personal safety and security.

Protections

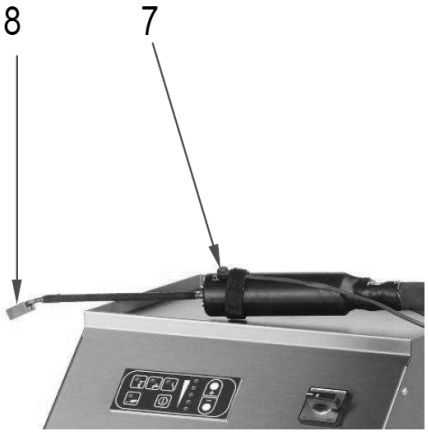


The machine is safe to use, however the utmost attention is recommended during use, as heated materials can burn on contact for a long time after the passing of the inductor. The inductor itself, even if continuously cooled, may become warm to the touch on parts red-hot and therefore there is a risk of burns.
The machine is equipped with several electronic protection systems against electrical surges and overheating. The thermal protection of the inductor mainly occurs when heating parts in metallic alloys. To start the product again, release and press again the button. For all the other protections, switch off the product using the ON/OFF switch.
Finally there are 2x 32 A fuses on the heating circuitry (fuse holder under the metallic cover of the product). The fuses should only be replaced after the defect has been eliminated.

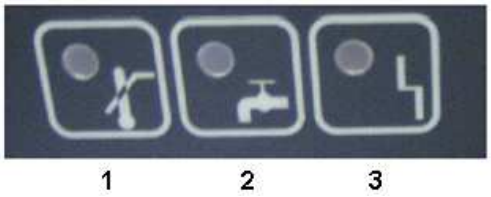
CONTROL PANEL DESCRIPTION



1	General ON/OFF switch
2	Power setting buttons
3	Power indicator (1kW – 11 kW).
4	Induction heating activation
5	Alarm indicator – Cooling circuit
6	Heating indicator (ON=heating; blinking = stand-by).
7	Heat switch
8	Inductor (ferrite)
9	Cooling liquid temperature alarm (machine stopped)
10	Inductor alarm (wrong inductor or short-circuit)
11	Cooling liquid temperature



« Alarm » indicators :



The alarm indicators above mean, from left to right :

1. A cooling liquid temperature which is too high. Leave the product ON without using the inductor, in order for the cooling liquid temperature to decrease.
2. An issue with the flow of cooling liquid (pump issue, blocked pipe).
3. A defective inductor; contact GYS after sales or your local distributor.

Note : in case of alarm, the product does not heat up.

INSTRUCTIONS OF USE

The product is delivered with a three-phase 400V / 50 Hz plug. In order to ensure an optimum use, the product should be connected to an electrical installation with minimum protection 16A, and protected according to applicable standards. See the instructions for electrical connections on page 8.

Turn the ON/OFF switch to the ON position. Press the induction heating activation button (4) described on page 5. The light on button 6 blinks indicating that the product is ready to heat. Position the inductor (8) flat on the part or the area to heat up, placing the open part of the ferrite against the part. Press the trigger (7) on the handle of the inductor to start heating; if necessary move the inductor in order to heat up a larger surface on the part. After stopping the heating, decrease the heating power level on the control panel, and secondly only switch off the product; this way the cooling circuit will reduce the temperature of the inductor before switching off completely the product.

RESIDUAL RISKS

WARNING!
The machine has been designed to ensure maximum safety. The possibility exists that the operator may get burnt if he touches hot parts.

WARNING!
The machine must not be used near sensitive materials or dangerous explosives, compressed gases, flammable liquids, electrical equipment.
Metal objects may not be worn in the vicinity of the inductor, as they will become hot (rings on finger for example).
It is forbidden for people wearing pace-makers or any other biomedical equipment to use this product.

Noise and vibrations
The machine produces a sound pressure level for continuous use of less than 60dB (A).
The machine does not generate significant vibrations that may cause danger.

Demolition and disposal
Some materials, with which the machine is built, can be recycled, therefore the recycling of the product should be performed in accordance with relevant local regulations.

Unpacking and installation
The machine is supplied ready for use. Before operating, you must remove all packing material and place the product carefully in a suitable place (ground even, dry and ventilated place).

WARNING!
The installation must be designed to allow easy access to all its parts. A minimum space around the product must be guaranteed for good operation and maintenance, without problems and risks for the operator.

Replacing the inductor

WARNING!
The replacement of the inductor should be performed only by authorized staff and only after removing power to the machine.
WARNING!
During maintenance and / or repair, wear protective gloves. Electrically isolate the machine by disconnecting it from the mains.
WARNING!
It is forbidden to start using the machine if all the metallic covers have not been screwed back on the product and if all the safety devices are not operational.

WARNING!
This machine has been designed to reduce at the maximum the risks relative to exposure to electromagnetic fields. However, residual risks may remain, and therefore it is recommended to respect a minimum safety distance of 30cm between the inductor and the head or the chest of the operator.

MAINTENANCE

General recommendations

- It is essential that the maintenance of the machine be carried out by qualified and authorized personnel, which is aware of the mode of operation thereof.
- Never perform any cleaning, lubrication or maintenance with the machine running.
- Before any maintenance work, switch to "0" the main power switch to turn off the power, unplug it from the network to avoid electrical shock or other hazards resulting from mishandling.
- Do not wear rings, watches, jewellery, dangling clothing, such as ties, torn garments, scarves, unbuttoned jackets or zip open that can be caught at work.
- Instead, you should use suitable clothes for accident prevention, for example: non-slip shoes, anti-noise headphones, goggles, appropriate gloves, etc. ...
- Never use gasoline or flammable solvents to clean the machine. Use water and, if needed, commercial non-toxic solvents.
- After the interventions, always refit, before restarting the machine, the guards eventually removed.

Preventive Maintenance

Meticulous inspections carried out at regular intervals of time are necessary in order to detect and eliminate faults quickly, before they can cause damage.

WARNING !

Every time you need to use the POWERDUCTION 110L product, check first the safety devices of the product, and any anomaly which could lead to bad operation of the product. Check daily for wear and legibility of the warning signs.

WARNING !

The operational safety of the machine can only be guaranteed if repairs are carried out using only the original spare parts and if approved maintenance instructions are carried out correctly.

After each use, with the electrical system turned off, the machine should be cleaned promptly, to remove dust or dirt in general, because they may decrease ventilation and alter the proper functioning of the product and its durability.

Before each use, check the operation of the control devices, safety devices and the integrity of the electrical connection cables.

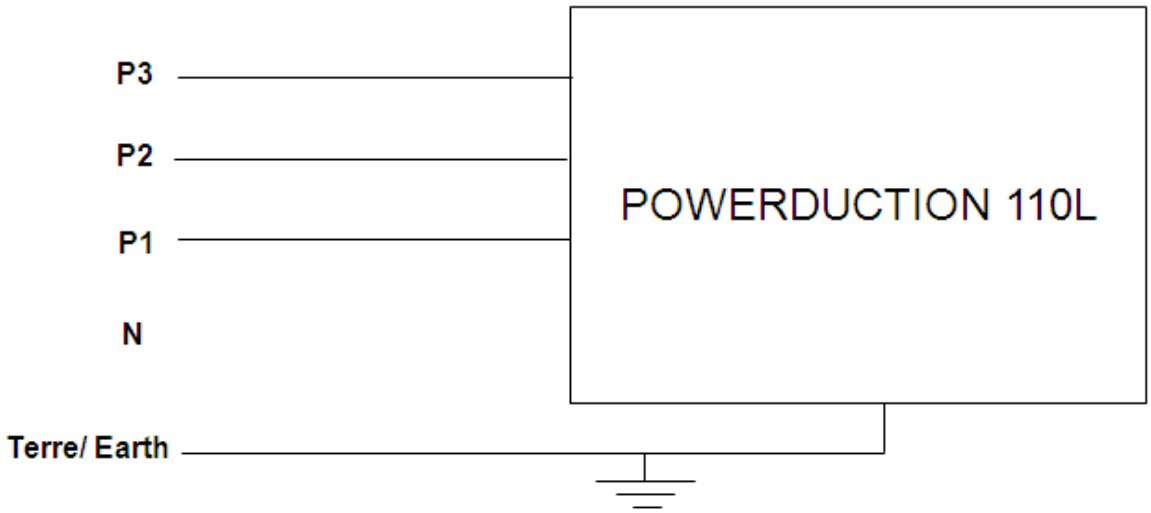
WARNING !

Make periodic visual checks on the inductor to verify that there are no fluid leaks and air inlet port to verify that they are free.

ELECTRICAL CONNECTIONS

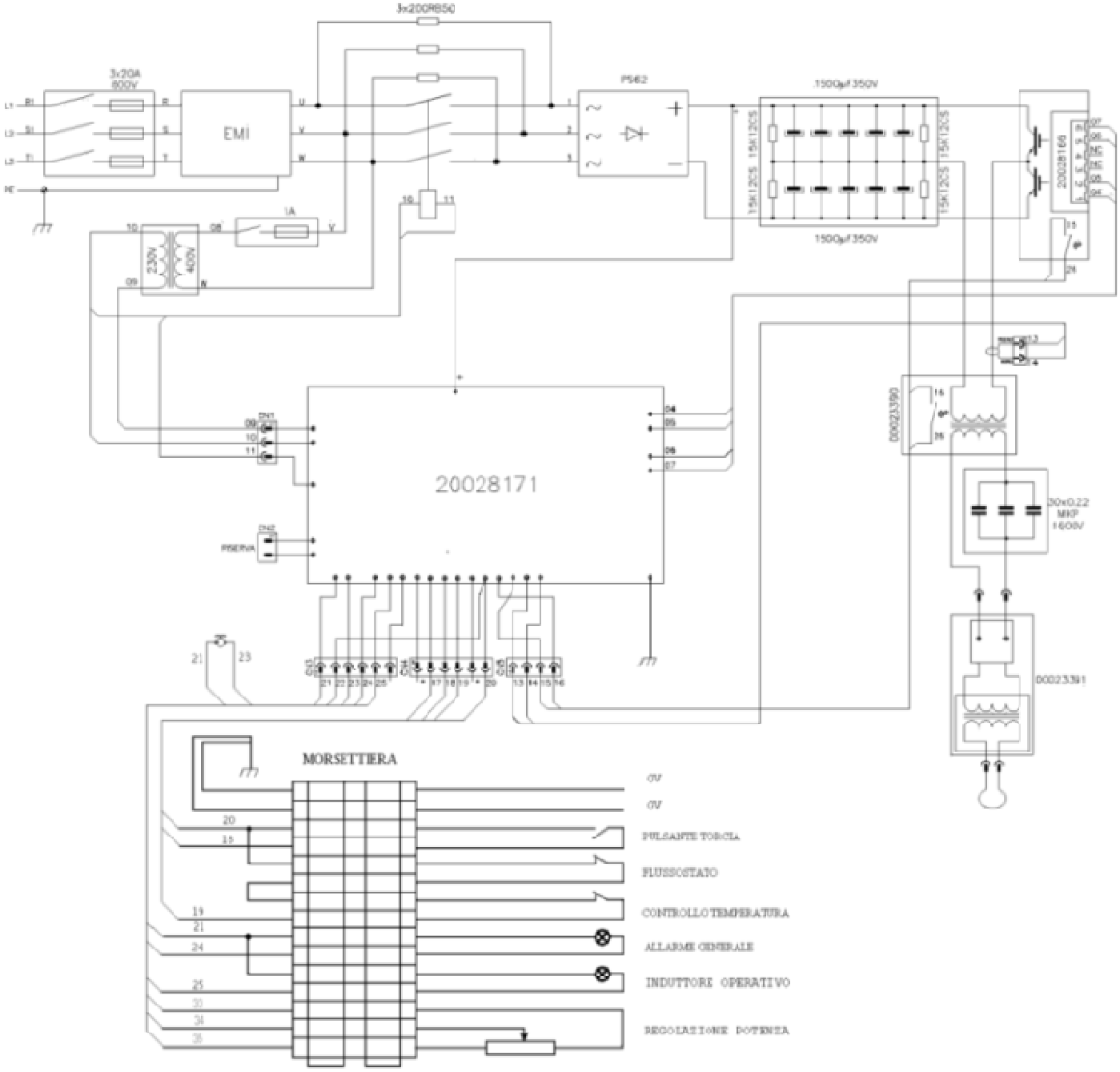
The product has been designed for 400V / 50 Hz three-phase electrical supply.
WARNING : do not use on 60Hz electrical supply.

On a three-phase 400V electrical supply, connect the mains cable as shown below :

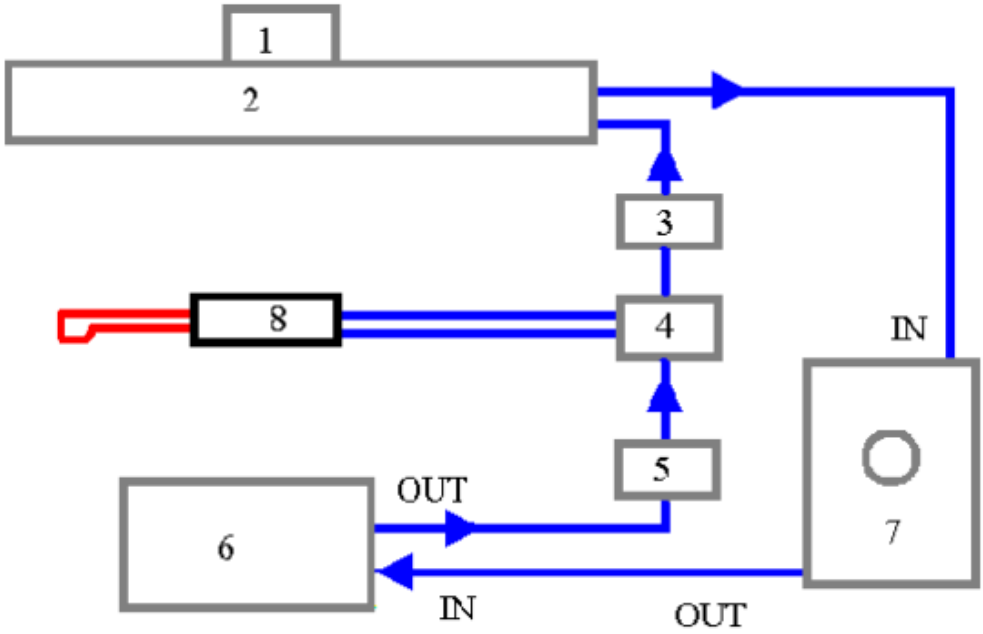


A specific order has to be respected when connecting the 3 phases. If this order is not respected, the PHASE / ALARM LED will switch ON. Modify the order of the phases until the PHASE / OK - LED switches ON.

ELECTRICAL DIAGRAMS



COOLING LIQUID CIRCUIT DIAGRAMS



1) Fan 1309000304
2) Radiator 1409000301
3) Thermostat 1309000406
4) 1409000218 inductor junction box
5) Flow detector 1109000413
6) Pump 1209000303
7) Tank 1409000302
8) Inductor : 1409000218.

Front panel	1409000402
Crankcase full	1409000403
Fixed wheel	1409000404
Rotating wheel	1409000405
Top panel	1409000406

Components and parts

This section contains a list of the components of this machine. Its contents may be used for identification of spare parts. For rapid delivery of spare parts, please quote the following order:

1) Number in the list
2) Code number (design or commercial)
3) Name of part
4) Quantity
5) Serial number of the machine
6) Year of manufacture

ROHS CERTIFICATE OF COMPLIANCE

Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of use of certain hazardous substances in electrical and electronic equipment

GYS declares that:

The POWERDUCTION 110L product complies with this directive and does not contain concentrations that exceed the limits for the following substances :

- Lead (Pb)
- Mercury (Hg)
- Cadmium (Cd)
- Hexavalent chromium (Cr (VI))
- Polybrominated biphenyls (PBB)
- Polybrominated diphenyl ethers (PBDEs)

CE DECLARATION OF CONFORMITY

GYS certifies that the product POWERDUCTION 110L is compliant with the following directives and standards :

Directive CE2004/40 / Exposure to electromagnetic fields.
The Low Voltage Directive CE 2006/95.
Machinery Directive 2006/42/EC.
EMC Directive 204/108 EEC.
Directive 200 2/95/CE.
EC Directive 2002/96.

CE

Changes which would have effects on the technical specifications of the product and affect the use in conformity with the user manual, make this declaration of conformity not valid!

27/02/2014
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